

BOOK REVIEW

Infrared Spectra of Adsorbed Species. By L. H. LITTLE (with supplementary chapters by A. V. KISELEW and V. I. LYGIN). Academic Press, Inc., New York and London, 1966. xii + 428 pp. Price \$16.00.

This is the first book-length monograph on this subject. In view of the rapid growth of the field during the past decade, it is a welcome addition to the review literature.

In Chapters 3-6 and 12-14 the material is organized according to individual adsorbate-adsorbent systems. The remaining chapters deal with specific effects and problems concerning surface chemistry, spectroscopy, and catalysis. Some repetition is intrinsic in this system of classification, however, in the opinion of the reviewer the level of repetition throughout this book is far greater than required and detracts significantly from its value.

The first chapter, complete with 67 references, is essentially a concise review of the entire book. Here the author briefly outlines each of the later chapters. In the second chapter, dealing with experimental techniques, a detailed description of almost every published infrared cell arrangement is presented along with some general information that would be of value to new workers in the field. In each of the subsequent chapters the author again tells the reader what he intends to discuss. This is generally followed by a superficial introduction and review of the theoretical aspects of the problem to which the infrared studies described in the chapter have been directed. Almost every published spectrum is reproduced—often giving very little aid to the reader and adding little to the clarity—and these spectra are subsequently summarized in extensive tables that in-

clude every one of the often conflicting assignments. In several chapters, individual papers are reviewed at such length that it is hardly necessary for the reader to consult the original article.

The format is very disappointing. This appears to be largely the fault of the publisher. There is excessive need to refer to other pages in the text for figures and for complete discussions of specific points. In many places, footnotes for tables and legends for figures appear on different pages.

A good feature of the book is the interjection of critical comments with respect to the significance and limitations of many of the investigations. These comments are based on the extensive experience of the author and add much to the value of the review. A substantial portion of the work covered was performed in the author's laboratory and he has clearly had personal contact with many leaders in the field. The result is a very thorough and authoritative work. However, it is more of a reference for the experienced researcher rather than one that can be read easily by the uninitiated as was the author's intention. The inclusion of an addendum containing titles and references to papers that were published after the manuscript had been completed is commendable.

In the final analysis, and in spite of the shortcomings mentioned above, I must recommend this book. Anyone interested in knowing whether infrared spectroscopy has been applied to a particular system or to a particular problem involving surface chemistry and catalysis should first consult this book.

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